

IN THE CLAIMS:

This version of the claims replaces and supercedes all prior versions of the claims.

1. (Currently Amended) A mobile phone having at least one main clock system and operating based on a main clock signal of said main clock system, wherein said main clock system comprising:

 a main counter configured to count [for counting] main clocks of said main clock signal; and

 a power saving circuit configured to stop [means for stopping] generation of said main clock signal for a time period, while counting wait clocks of a wait clock signal, to restart [for restarting] the generation of said main clock signal after the time period, and to control [for controlling] said main counter based on the counted wait clocks as if said main counter always counts said main clocks of said main clock signal,

 wherein said power saving circuit [means] comprises:

 a correction controller configured to count [control means for counting] said wait clocks of said wait clock signal for the time period during which the generation of said main clock signal is stopped, and to correct [for correcting] a count value of said main counter based on the counted wait clocks,

 said correction controller [control means] comprises:

 a single counter configured to count [counting means for counting] said wait clocks of said wait clock signal for the time period during which the generation of said main clock signal is stopped; and

 a calculator configured to calculate [calculating means for calculating] said main

clocks while the generation of said main clock signal is stopped; and

a setting circuit configured to correct [means for correcting] the count value of said main counter based on the calculated main clocks.

2. (Currently Amended) The mobile phone according to claim 1, wherein said power saving circuit [means] further comprises:

a stop controller configured to stop [control means for stopping] the generation of said main clock signal; and

a restart controller configured to restart [control means for restarting] the generation of said main clock signal after said time period elapses, such that said main counter counts said main clocks from the corrected count value.

3. (Original) The mobile phone according to claim 1, wherein a frequency of said main clock signal is larger than a frequency of said wait clock signal.

4. (Original) The mobile phone according to claim 1, wherein the time period during which the generation of said main clock signal is stopped is predetermined.

5. (Cancelled)

6. (Currently Amended) The mobile phone according to claim 1, wherein said calculator [calculating means] comprises:

a ratio calculator configured to determine [means for determining] a frequency

ratio of a frequency of said main clock signal to a frequency of said wait clock signal;
a CPU [read means for] reading out a count value from said main counter when the generation of said main clock signal is stopped, [;] and [means for] calculating said main clocks while the generation of said main clock signal is stopped, based on the counted wait clocks of said wait clock signal.

7. (Currently Amended) The mobile phone according to claim 6, further comprising:

a battery; and
[first driving means for driving said ratio means] said ratio calculator calculates when a voltage of said battery changes.

8. (Currently Amended) The mobile phone according to claim 6, further comprising:

a temperature sensor; and
[second driving means for driving said ratio means] said ratio calculator calculates when said temperature sensor senses change of a temperature of said mobile phone.

9. (Original) The mobile phone according to claim 1 comprising first and second main clock systems, each of which is same as said main clock system.

10. (Currently Amended) [A] The mobile phone according to claim 9, wherein said wait clock signal is shared by said first and second main clock systems.

11.-15. (Cancelled)

16. (Currently Amended) [The mobile phone according to claim 15,] A mobile phone having at least one main clock system, said main clock system comprising:

a main clock generator which generates a main clock signal;

a single main counter which carries out a counting operation of main clock of said main clock signal in response to said main clock signal generated by said main clock generator;
and

a processor which stops the counting operation of said main counter by stopping the generation of said main clock by said main clock generator before entering a waiting operation and changes a count value of said main counter as if the counting operation of said main counter has been not stopped when going out of the waiting operation, said change is based upon a preset value include a ratio of the frequency of the main clock signal to the frequency of the wait clock signal,

wherein said processor comprises:

a wait timer which carries out a counting operation of wait clocks of a wait clock signal in response to a wait clock signal for a predetermined time corresponding to a time period during which the generation of said main clock signal is stopped; and

a CPU which operates based on the count value of said main counter in response to said main clock signal,

said CPU changes the count value of said main counter by adding data corresponding to the number of said main clocks while the counting operation of said main counter is stopped, to the count value of said main counter,

said CPU calculates said data to be added, based on said wait clocks counted by

said wait timer during said predetermined time,

[wherein] said processor further comprises:

a clock precision unit which holds a ratio of a frequency of said main clock signal to a frequency of said wait clock signal, and

[wherein] said CPU calculates said data by multiplying said wait clocks counted by said wait timer by said ratio held by said clock precision measuring unit.

17.-24. (Cancelled)

25. (Currently Amended) [The method according to claim 22, wherein] A method of saving power consumption in a mobile phone having at least one main clock system and operating based on a main clock signal of said main clock system, wherein said method comprising:

(a) counting main clocks of said main clock signal using a first single counting means;

(b) stopping generation of said main clock signal for a time period, while counting wait clocks of a wait clock signal using a second single counting means;

(c) restarting the generation of said main clock signal after the time period; and

(d) restarting the counting operation of said main clock of said main clock signal from preset data corresponding to said counted wait clocks of said wait clock signal, said preset data includes a ratio of the frequency of the main clock signal to the frequency of the wait clock signal.

wherein said (b) restarting comprises:

(e) counting said wait clocks of said wait clock signal for the time period;

(f) calculating said preset data based on a count value of said main counter based on said counted wait clocks of said wait clock signal; and

(g) setting said preset data,

said [step] (f) calculating comprises [the steps of]

(h) determining the frequency ratio of a frequency of said main clock signal to a frequency of said wait clock signal;

(i) multiplying said counted wait clocks of said wait clock signal by said frequency ratio; and

(j) adding the counted main clocks when the generation of said main clock signal is stopped, to the multiplying result.

26. (Currently Amended) The method according to claim 25, further comprising [the step of] carrying said [step] (h) determining when a voltage of a battery changes.

27. (Currently Amended) The method according to claim 25, further comprising [the step of] carrying said [step] (h) determining when a temperature of said mobile phone changes.

28.-32. (Cancelled)

33. (New) A mobile phone having at least one main clock system and operating based on a main clock signal of said main clock system, wherein said main clock system comprising:

a main counter configured to count main clocks of said main clock signal;

a wait counter configured to count wait clocks of wait clock signal;

a precision measuring unit configured to calculate said frequency of ratio between said main clock signal and said wait clock signal; and

a controller configured to stop and restart said generation of said main clock signal, and to reload a value to said main counter prior to restarting said generation of said main clock signal, wherein said value is calculated according to both the time period which said generation of said main clock is stopped and said frequency ratio between said main clock signal and said wait clock signal.

34. (New) The mobile phone claimed in claim 33, further comprising:

a temperature sensor,

wherein said precision measuring unit calculates said frequency ratio between said main clock signal and said wait clock signal when temperature sensor detects temperature change.

35. (New) The mobile phone claimed in claim 33, further comprising:

a battery,

wherein said precision measuring unit calculates said frequency ratio between said main clock signal and said wait clock signal when said battery detects the voltage change.

36. (New) The mobile phone according to claim 33, wherein a frequency of said main clock signal is larger than a frequency of said wait clock signal.

37. (New) The mobile phone according to claim 33, wherein the time period which the

generation of said main clock signal is stopped is variable.

38. (New) The mobile phone according to claim 33 comprising first and second main clock systems each of which is same as said main clock system.

39. (New) A mobile phone according to claim 38, wherein said wait clock signal is shared by said first and second main clock systems.